

Name: _____

A2&T: Review for Exam 1 Quarter 2

In addition to this review sheet, please study all class notes and homework assignments.

- 1) Expressed in simplest form, $\frac{\frac{1}{a^2} - \frac{1}{b^2}}{\frac{1}{b} + \frac{1}{a}}$ is equivalent to
- A) $\frac{a-b}{ab}$ B) $\frac{b-a}{ab}$ C) $b-a$ D) $a-b$
- 2) What is the solution set of $\frac{2x+3}{5} = \frac{x+6}{4}$?
- A) {9} B) {3} C) {1} D) {6}
- 3) What is the solution set of $\frac{3x+2}{3x+2} = \frac{x+4}{2x+9}$?
- A) {5}, only B) {-5, 5} C) {-5}, only D) { }
- 4) Solve: $\frac{2x}{3} - \frac{4}{x} = \frac{5}{3}$
- A) $x = -\frac{3}{2}$ or $x = 4$ C) $x = -\frac{3}{2}$ or $x = -4$
- B) $x = \frac{3}{2}$ or $x = -4$ D) $x = \frac{3}{2}$ or $x = 4$
- 5) What is the solution set of the equation $\frac{x}{x-4} - \frac{1}{x+3} = \frac{28}{x^2-x-12}$?
- A) {4} B) {-6} C) {4, -6} D) { }

6) Find the solution set of $\frac{c+1}{2c+6} - \frac{9}{c^2-9} = \frac{c-2}{2c-6}$.

7) What is the solution set for the equation $|x+1| = 5$?

- A) $\{4, 6\}$ B) $\{-4, 6\}$ C) $\{-4, -6\}$ D) $\{4, -6\}$

8) What is the solution set for the equation $|3x-1| = x+5$?

- A) $\{1, -3\}$ B) $\{3\}$ C) $\{-1, 3\}$ D) $\{-1\}$

9) Solve for the variable: $|3y+2| + 4 = 2$

10) Solve for *all* values of x : $|3x-1| = 5$ [*Show all work.*]

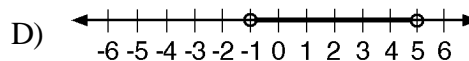
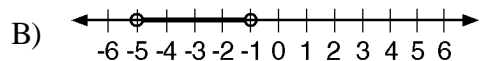
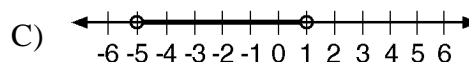
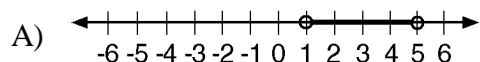
11) What is the solution set for $|3x+6| \leq 30$?

- A) $\{x \mid x \leq -8 \text{ or } x \geq 12\}$ C) $\{x \mid -12 \leq x \leq 8\}$
B) $\{x \mid x \leq -12 \text{ or } x \geq 8\}$ D) $\{x \mid -8 \leq x \leq 12\}$

12) What is the solution set for $|x-3| > 5$?

- A) $\{x \mid x < 8 \text{ or } x < -2\}$ C) $\{x \mid x < 8 \text{ and } x > -2\}$
B) $\{x \mid x < 8 \text{ and } x < -2\}$ D) $\{x \mid x > 8 \text{ or } x < -2\}$

13) Which graph represents the solution set of $|5x - 15| < 10$?



14) What is the solution to $y^2 = 4y + 9$ after completing the square?

A) $-2 \pm \sqrt{13}$

B) $2 \pm \sqrt{13}$

C) $2 \pm \sqrt{5}$

D) $-2 \pm \sqrt{5}$

Questions 15 and 16 refer to the following:

Solve the given equation by completing the square. [*Express the answer in simplest radical form if necessary.*]

15) $x^2 - 6x - 5 = 0$

16) $y^2 - 7y + 4 = 0$

17) What is the solution to the quadratic equation $x^2 - 4x - 1 = 0$?

A) $2 \pm \sqrt{5}$

B) $4 \pm \sqrt{5}$

C) $4 \pm \sqrt{12}$

D) $2 \pm \sqrt{3}$

18) What is the positive root of the equation $2x^2 - 7x + 4 = 0$?

A) $\frac{-7 - \sqrt{17}}{4}$

B) $\frac{1}{2}$

C) $\frac{7 + \sqrt{17}}{4}$

D) 4

19) What are the roots of the equation $2x^2 - 6x + 3 = 0$?

A) $\frac{-3 \pm \sqrt{3}}{2}$

B) $\frac{-3 \pm \sqrt{15}}{2}$

C) $\frac{3 \pm \sqrt{15}}{2}$

D) $\frac{3 \pm \sqrt{3}}{2}$

Questions 20 and 21 refer to the following:

Solve the given expression using the quadratic formula. [*Express the answer in simplest radical form.*]

20) $2(x^2 - 1) = 3x$

21) $2w = \frac{4}{w} + 5$

22) The roots of the equation $x^2 - 3x + 7 = 0$ are

A) $\frac{3 \pm i\sqrt{19}}{2}$

B) $3 \pm \frac{i\sqrt{19}}{2}$

C) $\frac{3 \pm \sqrt{19}}{2}$

D) $3 \pm \frac{\sqrt{19}}{2}$

23) What are the roots of the equation $x^2 + 6x + 12 = 0$?

A) $-3 \pm \sqrt{3}$

B) $-6 \pm i\sqrt{3}$

C) $-3 \pm 2i\sqrt{3}$

D) $-3 \pm i\sqrt{3}$

24) What is the product of $5 + \sqrt{-36}$ and $1 - \sqrt{-49}$?

A) $47 + 41i$

B) $-37 + 41i$

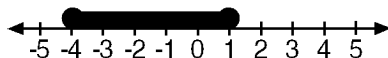
C) $47 - 29i$

D) $5 - 71i$

25) Find the solution to the equation $\sqrt{2x - 5} + 3 = 6$.

26) Simplify: $\frac{x^2 - 25}{2x + 12} \cdot \frac{x^2 + 8x + 12}{4x - 20} \div \frac{x^2 + 7x + 10}{8x}$

27) What interval notation represents the data graphed below?



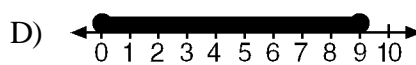
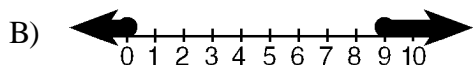
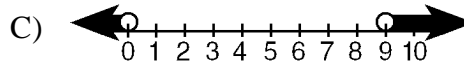
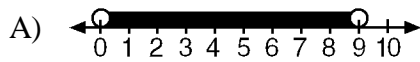
A) $[-4, 1)$

B) $[-4, 1]$

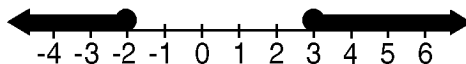
C) $(-4, 1)$

D) $(-4, 1]$

28) Which of the graphs below shows the solution set of $(-\infty, 0) \cup (9, \infty)$?



29) Express the given number line in interval notation:



30) Solve $2x^2 - 12x + 4 = 0$ by completing the square, expressing the result in simplest radical form. [Show all work.]